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voltages on the two conducting paths, a common noise voltage that is coupled to both conducting paths in the differential pair does not affect the signal. This renders a differential pair less sensitive to cross-talk noise, as compared with a single-ended signal path.

One example of a differential pair electrical connector is shown in U.S. Patent No. 6,293,827 ("the '827 patent"), which is assigned to the assignee of the present application. The '827 patent is incorporated by reference herein. The '827 patent discloses a differential signal electrical connector that generally utilizes individual shields corresponding to each pair of differential signals to provide shielding.

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While the electrical connector disclosed in the '827 patent and other presently available differential pair electrical connector designs provide generally satisfactory performance, the inventors of the present invention have noted that at high speeds (for example, signal frequency of 3 GHz or greater), the presently available electrical connector designs may not sufficiently provide desired minimal cross-talk, impedance and attenuation mismatch characteristics.

These problems of cross-talk, impedance and attenuation mismatch are more significant when the electrical connector utilizes single-ended signals, rather than differential signals.

What is desired, therefore, is a high speed, high density electrical connector design that provides improved cross-talk minimization, impedance and attenuation control regardless of whether the connector utilizes single-ended signals or differential signals. Further, what is desired is a printed circuit board for such high speed, high density electrical connector design.